Turkish Adaptation of Visual Phonics

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Abstract

Reading is one of the most significant academic skills and numerous students have difficulties with reading including students who are deaf and hard of hearing. An average student with hearing impairments graduates from a high school with a fourth-grade reading comprehension level that is alarmingly poor. Several reasons may cause this low reading achievement and one of them is a lack of phonological knowledge. Unfortunately, deaf and hard of hearing students mostly do not receive instruction that is phonics based. Even though the curriculum should be the same for all students, instructions need to be differentiated based on students' needs. Visual Phonics is a teaching tool to improve phonological skills using multisensory modalities and has the promise to improve the phonological skills of students with reading difficulties, especially for students who are deaf and hard of hearing. A growing body of research studies supported the effectiveness of this evidenced based strategy. Although Visual Phonics has been successfully utilized for almost four decades in the USA, it has not been used in Turkey and there is no strategy similar to it. Therefore, the purpose of this study was to inform educators and parents about Visual Phonics and to adapt it to the Turkish Language.

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Introduction

Reading is an essential skill to be successful in school and life. Learning to read is a complex process and has different components. Reading has two broad domains such as code-related skills and language-related skills (Hoover & Gough, 1990; Mayer & Trezek, 2015). Inadequacies in any of these areas may contribute to poor reading development. National Reading Panel (2000) conducted a comprehensive meta-analysis and summarized that effective reading instructions have five elements: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Phonemic awareness and phonics were examined under the alphabetics, and these two skills are highly correlated with each other also, the most important precursors of later reading success (NRP, 2000).

Mastering these skills during the early years helps students to become better readers in later years. According to Stanovich's (1986) Matthew effect, the rich get richer, and the poor stay the same or get poorer. For example, Cunningham and Stanovich (1997) examined some first graders' reading skills, and ten years later, they reached half of these students and looked at their reading abilities. They found that first grade reading skill was a powerful predictor of the 11th grade reading ability, so reading problems should be solved during the early years.

Students who are deaf and hard of hearing have more reading difficulties when compared to their hearing peers. Even though it seems to be improving because of early identification and amplification (Mayer & Trezek, 2018; Paul & Alqraini, 2019). The average student with hearing loss graduates from a high school with approximately fourth-grade reading level (Paul, Wang, & Williams, 2013; Wurst, Jones, & Luckner, 2005). The majority of students who are deaf and hard of hearing find it difficult to acquire reading and writing skills. Several reasons play a role in deaf and hard of hearing students' poor reading abilities such as lack of phonemic, vocabulary, and syntactic knowledge. Reading failure of students who are deaf and hard of hearing can be the result of any of these deficiencies alone or in conjunction (Miller et al., 2013).

Phonology is one of the most important components of language. It is called the building blocks of a language, and individuals must be able to access its phonology to learn the language, read, and write. Acquiring phonology can lead to raising comprehension, language structures, and vocabulary knowledge (Paul et al., 2013). Phonemic awareness, letter-sound relationship, and speech production are skills that are related to phonology. Because of hearing loss, students who are deaf and hard of hearing cannot fully access phonology, and they need precise phonological instructions. The NRP (2000) recommended systematic and explicit phonics instruction and particularly mentioned Jolly Phonics and Letterland that use hand motions and actions to reinforce learning.

Jolly Phonics was developed for the youngest beginning readers (four to five-year-old in the United Kingdom). The program uses a multisensory approach and includes playful, creative, and flexible activities and instructions. Children are taught with mnemonics and hand movements to help them

to remember the letter-sound correspondences. For example, when introducing the ‘s’ sound, Lloyd (2007) advises:

Start by telling the story about a boy who takes his dog for a walk, hears the dog barking and then sees a snake rear up hissing 'sssssssssssssss'. The suggested story line is given in note form so it can be told in a personal way. The sound and action is incorporated in each story. In this case the snake makes the 'ssss' sound and the action is the children waving their arms, imitating the movement of the snake, and saying 'ssss' The children are told that this is one of the letter sounds (p. 6).

Another effective phonics program that adds unique actions to teach phonics is Letterland. The program has animated characters that represent the shape of letters, and characters’ names prompt the relevant sounds, such as Annie Apple, Fireman Fred, Hairy Hat Man, and Sammy Snake, and each one has an action. (More information can be found at us.letterland.com.).

The role of code-related skills in learning to read is well-documented (Mayer & Trezek, 2015; NELP, 2008; NRP, 2000; Paul et al., 2013). Instructional methods supported by research findings are crucial elements of a successful reading program and effective teaching strategies lead to tremendous increases in students’ learning; however, teachers need to be knowledgeable about what to teach and how to teach (Hartman et al., 2019; Morrison et al., 2008; Snow et al., 1998). Traditional instruction that is based on speech and hearing may not be adequate for many deaf and hard of hearing students (Narr, 2006; 2008). Evidently, phonological instruction does not need to be dependent on speech intelligibility and/or hearing (Narr, 2006; Paul & Wang, 2012). For example, some d/Dhh students access phonological information through their residual hearing and others benefit from multisensory strategies (e.g., auditory, visual and tactile/kinesthetic) (Narr, 2006). Therefore, alternative methods, such as Visual Phonics, is required to improve literacy outcomes of d/Dhh students (Mayer & Trezek, 2015; Paul et al., 2013).

Visual Phonics

Visual Phonics is a multisensory teaching strategy to teach code-related literacy skills such as phonemic awareness, phonics, and alphabetic principles. Visual Phonics has 46 hand cues and

corresponding written symbols for the sounds (International Communication Learning Institute [ICLI], 2011). Visual Phonics was created by a mother of three deaf children to give them visual and tactile access to sounds (Woolsey et al., 2006). Then changed and improved with professionals. The hand cues mimic the articulatory features of sounds and provide visual and kinesthetic access to phonological information. The usage of Visual Phonics hand shapes will fade when students master the associations (Montgomery, 2008). It is important to note that Visual Phonics is not a complete phonics program therefore hand cues need to be incorporated into existing reading curriculum (Kart, 2022b; Paul &Wang, 2012; Waddy-Smith & Wilson, 2003).

An example of Visual Phonics hand cue is shown in Figures 1 and 2.

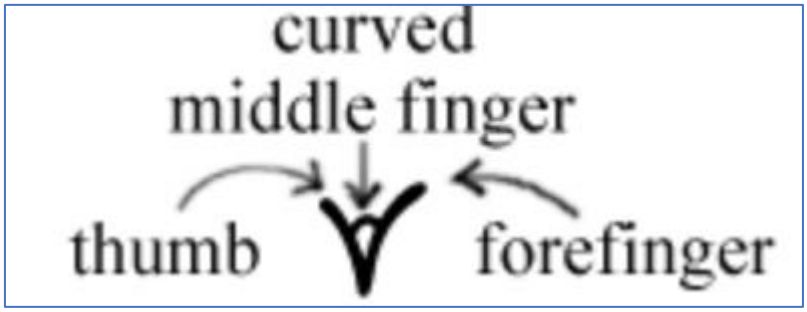
The hand cue for the /t/ sound is produced in two steps. First, the hand is held in a fist near the mouth with the thumb and index finger facing the body. Second, the tip of the index finger is quickly flicked upward off the thumb, representing the tongue flicking off the roof of the mouth and releasing the puff of air when this sound is produced (Morrison et al., 2008, p. 13).

Figure 1

The Hand Cue for the /t/ Sound

Figure 2

Representation of the Sound /t/



Note. Source: ICLI (2011, Introduction to Visual Phonics section).

Research on Visual Phonics

Kart (2022b) reviewed the literature to provide a comprehensive understanding of Visual Phonics and its effects on reading related skills. Twelve articles containing thirteen studies met the inclusion criteria. The results demonstrate that Visual Phonics can be an effective strategy to teach code-related skills for hearing kindergarteners who are at risk for reading difficulties and deaf and hard of hearing students, regardless of the degree of hearing loss, grade placement, communication method, home language, and prevalence of an additional disability (for detailed information related to research on Visual Phonics please see Kart, 2017; 2022b; 2023).

A recent mixed method study found that Turkish scholars had favorable (agree or strongly agree) attitudes toward the use of Visual Phonics in Turkey (Kart, 2022a). They believe that Turkish adaptation of Visual Phonics may help students with disabilities to prevent or minimize early reading difficulties and, also, using Visual Phonics is appropriate for the Turkish educational system and across different student populations. Also, follow up qualitative findings revealed that Visual Phonics is expected to be effective for Turkish deaf and hard of hearing students and other students with disabilities as well as typically developing early readers. Unfortunately, Turkish educational system lacks effective evidence-based strategies, and any evidence-based practice, with adaptations, would be helpful for diverse body of students to support their reading

development (Kart, 2022a). Therefore, the purpose of this study is to inform about Visual Phonics and to adapt it to the Turkish Language.

Adaptation Process of Turkish Visual Phonics

Turkish is a transparent language, and the Turkish alphabet has 29 letters – 21 consonants and 8 vowels. There is a one-on-one relation between letters and sounds, and letters are always pronounced in the same way. Visual Phonics has 46 hand cues and written symbols for the English language, and it focuses on sounds, not letters. Since the English alphabet has only 26 letters, and one letter could represent more than one sound or two or more letters may be represented by one sound, written symbols are needed to address the same sound. Written symbols help students with spelling and decoding activities. However, the Turkish alphabet has a one-on-one letter-sound relationship. Therefore, only hand cues are adopted.

The adaptation process began with the creation of an approximate pronunciation chart (see Appendix A). While doing that, three different sources were used (Lewis, 1967; Mardin, 1976; Underhill, 1976). Turkish and English alphabets have identical letter and sound relationships. Turkish alphabet has ten exact matches such as consonants b, m, and p represent the same sound and letter in two alphabets, so the same or very similar hand cues are used for those sounds. For example, to produce the hand cue for sound /d/ make a dot in the air with forefinger by jerking downward once. Also, English sounds /ch/ and /sh/ are represent as letters “ç” and “ş” in the Turkish alphabet, and again similar hand cues are utilized for these sounds.

Moreover, Turkish and English languages have sounds that they are pronounced similarly and represented with the same letters most of the time. For example, letter g in Turkish alphabet is always pronounced as “hard g” sound of English as in “gale” not in “giant”. For letters like a similar situation for g, hand cues are chosen based on the sounds they represent. To produce hand cue for “hard g” sound hold thumb and forefinger together horizontally, then slightly open them. Furthermore, Turkish and English alphabets have the same letters, but they represent different sounds. For example, Turkish letter c is pronounced like “soft g” sound as in “jellyfish”. To sum up, for the same or almost the same sounds, the similar hand cues are utilized.

Turkish alphabet has four different letters that do not appear in English alphabet. They are ğ, ı, ö, and ü. The English language does not have sounds /ğ/, /ö/, and /ü/. For sound /ı/ English alphabet does not have a separate letter, but some English words have somewhat similar pronunciations. The same situation is valid for Turkish letter j. Hand cues for letters ı and j were determined by the author and Dr. Dorothy L. Morrison who is an expert of Visual Phonics. She is one of the professionals who took an active role in the creation and widespread use of Visual Phonics. She also served as an inter-rater for hand cues for the sounds that two languages share. Dr. Morrison listened the author's pronunciations who is a native speaker of Turkish and determined whether or not Turkish sounds have similarities with English sounds. Three letter/sounds (ğ, ö, and ü) do not address similar sounds of English, and new hand cues were created (see Appendix B). Existing hand cues were not used for new sounds because of possible usage of English Visual Phonics in the future. Another reason not to use existing hand cues was that Visual Phonics hand cues were created carefully to provide visual and tactile information about the pronunciation (articulation mimics the articulation of sound) of the sounds, so each hand cue is unique. After the process of developing hand cues, findings were discussed with a Turkish scholar who has fifteen years of teaching experience. He was 100% agreed with the hand cues.

Conclusion

Reading is an essential skill, and some students find reading complicated. Visual Phonics may make it easy and support their literacy development. Visual Phonics is not a reading curriculum or instruction on by own, and it can be easily integrated into any phonic based reading instruction (Kart, 2022b; Waddy-Smith & Wilson, 2003). Turkey already has a phonic based literacy curriculum, so Visual Phonics hand cues could be unified with it as a supportive evidence-based teaching strategy (Miller et al., 2013; Sarikaya & Uzuner, 2013; Uzuner et al., 2011). Visual Phonics can be incorporated into any traditional phonological awareness activities such as rhyming words, phoneme counting, oddity task, and sequencing and segmenting sounds (for more details, see Kart, 2023; Waddy-Smith & Wilson, 2003).

Turkish academicians believe that using Visual Phonics may increase educational opportunities and provide differentiated teaching techniques for students with disabilities, especially for students

who are deaf and hard of hearing (Kart, 2022a). Because deaf and hard of hearing students do not have full access to speech sounds through the auditory channel only, Visual Phonics provides additional visual and tactile access to phonemes, which is fundamental to learning to read in any alphabetic language. Similar to deaf and hard of hearing students in the USA, Turkish deaf and hard of hearing students' reading achievement level is alarmingly poor when compared to that of typically developing learners (Miller et al., 2013). Therefore, Turkish adaptation of Visual Phonics may enhance the reading development of diverse students and it is appropriate for the Turkish educational system (Kart, 2022a).

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Appendixes

Appendix A: Approximate Pronunciations

• Most of the consonants, such as b, d, f, l, m, n, p, t, y, and z are identical, in their pronunciation.

• a, a as other and cut

• c, j as in jam and jury.

• ç, ch as in church and change.

• e, e as in bet, red, net

• g, g as in gale, gun, gust.

• soft g, it lengthens the preceding vowel.

• h, h as in high, hard, have.

• ı, i in cousin, second vowel of roses. Remarkable is spelled “rimarkıbıl” in Turkish.

• i, i as in city, thin, pin,

• j, French j. French jalousie (venetian blind) is “jaluzi” in Turkish.

• k, c as in cold, cat, cure.

• o, o as in note, poet

• ö, German ö or deux, seul in French. Like u in urge.

• r, r as in red and rhyme

• s, s as in send, see, sit, and sister.

• ş, sh as in shape, short, and sharp.

• u, “oo” as in foot, u as in put.

• ü, German ü, or tu and sur in French.

• v, v as in vine, vent

Appendix B: Hand Cues for Turkish Visual Phonics

A: Make a fist with the thumb straight up from the index finger. Draw your hand straight out from the mouth.

B: Jerk your vertically held-open hand forward once.

C: Hold your fingers like “C” in the air while moving out from your mouth.

Ç: Move your flat fingers, palm facing you, to an open position.

D: Make a dot in the air with your forefinger by jerking downward once.

E: Hold your little finger down with your thumb and move the other three fingers upward.

F: Hold your little finger down with your thumb at the chin palm facing your mouth and move the other three fingers upward with a breathing motion.

G: Hold your thumb and forefinger together horizontally, then slightly open them.

Ğ: Move your flat hand away from the mouth.

H: Slant your open hand toward your mouth. Quickly move to a slanted position away from your mouth with a breath-like motion.

I: Hold your first two fingers horizontally and move it away from your mouth.

İ: Hold your fingers bent with your thumb underneath. Move your hand forward out from your mouth.

J: Make your hand a fist then pop your pinky up and draw the letter in the air.

K: Hold ASL K handshape horizontally at the chin and move forward in short quick movement.

L: Draw the symbol in the air with your forefinger (thumb extended) moving upward toward your mouth.

M: Hold your fingers together and move them up and down while you move your hand away from your mouth.

N: Index finger with remaining fingers closed, moves from one side of the nose to the other.

O: Make an "O" with your fingers and thumb. Move your hand outward from your mouth.

Ö: Make an "O" shape but put your fingers slightly open. Move your hand outward from your mouth.

P: Put your thumb and fingers facing away from your face. Flick your four fingers quickly off your thumb, like a small explosion.

R: Draw the symbol in the air with your forefinger, moving outward from your mouth.

S: Draw the s symbol in the air with your forefinger, moving outward from your mouth.

Ş: Hold your index finger vertically away from your face and move it to your mouth

T: Make a fist with your fingers facing you. Flick your forefinger quickly off your thumb.

U: First three fingers slightly open in front of the mouth. Pull slightly down and out while having fingers meet

Ü: Produce U cue in a bigger position in front of the face

V: Open a closed fist, palm facing outward, to a V with the first two fingers moving away from you.

Y: Put your thumb and fingers close together. Extend your thumb and fingers as your hand moves quickly upward.

Z: Draw the symbol in the air with your forefinger.

Note: Adapted from See the Sound/ Visual Phonics Hand Signs by ICLI